

REMARKS

Claims 1-9 are pending in this application. By this Amendment, the specification and claims 1-5, 7, 8 and 9 are amended and claims 10-78 are canceled. Reconsideration in view of the above-outlined amendments and the following remarks is respectfully requested.

The specification was amended as outlined above to remove the references to the claims.

Entry of this amendment is appropriate under 37 C.F.R. §1.116 as the amendment: (a) places the application in condition for allowance for the reasons discussed herein; (b) does not raise any new issues that would require further consideration and/or search; (c) does not add any claims without canceling a corresponding number of claims; and (d) places the application in better form for appeal, should an appeal be necessary. The amendment is necessary and was not earlier presented because it is made in response to arguments raised in the final rejection. Entry of this Amendment is thus respectfully submitted.

I. THE CLAIMS DEFINE PATENTABLE SUBJECT MATTER

Applicants appreciate the indication of allowable subject matter in claim 6. Non-elected claims 7-9 are amended to depend solely from claim 6 and are also now in condition for allowance.

A. Claims 1-3 Are Patentable Over US Patent No. 5,161,093 to Gorczyca et al. in view of US Patent No. 5,027,253 to Lauffer et al.

Claims 1-3 were rejected under 35 USC § 103(a) over US Patent No. 5,161,093 to Gorczyca et al. ("Gorczyca") in view of US Patent No. 5,027,253 to Lauffer et al. ("Lauffer"). This rejection is respectfully traversed.

Amended claim 1 is directed to a printed circuit board arrangement. The printed circuit board arrangement has a core substrate having a cavity. A resin insulating layer and a conductor circuit are laminated on the core substrate. An IC chip is mounted on an outer

layer of the conductor circuit. The IC chip is connected via a solder bump located under the IC chip. A plurality of capacitance are accommodated in the cavity. The capacitors are located immediately below the IC chip. With such an arrangement, it is possible to supply power from the under part of the IC chip, which shortens the length of electric wiring. Electric power can be instantaneously supplied to the IC chip. As a result, the loop inductance can be reduced.

The Office Action relies on the combination of Gorczyca and Lauffer to allegedly render obvious the subject matter of claim 1. Applicants disagree with this assertion. Gorczyca discloses a high density interconnect structure to having a substrate 12 with a cavity 14. Gorczyca discloses a plurality of IC chips 16 that are accommodated in the cavity 14. The Office Action correctly notes that Gorczyca does not disclose an IC chip mounted on a conductor circuit and that the capacitors being located immediately below the IC chip. Furthermore, Gorczyca does not disclose that an IC chip is connected vi a solder bump under the IC chip.

The Office Action relies of Lauffer for allegedly teaching that a multiplayer circuit package having an IC chip mounted on an outer layer of the conductor circuit and the capacitor being located immediately below the IC chip. The chip 235 is Lauffer is connected to the capacitor 141 using a pin or wire connection 221, as shown in Fig. 2. Because of the length of this connection, it does not lower or reduce the loop inductance. As such, electric power is not instantaneously supplied to the IC chip. Furthermore, Lauffer does not disclose connecting the IC chip via a solder bump located under the IC chip. Accordingly, Lauffer fails to disclose, teach or suggest the deficiencies in Gorczyca.

Accordingly, applicants respectfully submit that the combination of Gorczyca and Lauffer fails to disclose the subject matter of claim 1. Claims 2 and 3 depend from claim 1

and are allowable over these references for at least the same reasons. Reconsideration and withdrawal of the rejections based upon Gorczyca and Lauffer are respectfully requested.

B. Claims 4 and 5 Are Patentable Over Gorczyca in view of Lauffer and further in view of U.S. Patent No. 6,153,290 to Sunahara.

Claims 4 and 5 were rejected under 35 USC § 103(a) over Gorczyca in view Lauffer and further in view of US Patent No. 6,153,290 to Sunahara. This rejection is respectfully traversed.

Claims 4 and 5 depend from claim 1 and are allowable for at least the reasons set forth above because Sunahara fails to disclose, teach or suggest the deficiencies of Gorczyca or Lauffer.

Accordingly, applicants respectfully submit that the combination of Gorczyca, Lauffer and Sunahara fails to disclose the subject matter of claims 4 and 5. Reconsideration and withdrawal of the rejections based upon Gorczyca and Lauffer are respectfully requested.


II. CONCLUSION

Applicants respectfully submits that claims 1-8 define subject matter that is patentable over the prior art cited of record. It is respectfully submitted that the application is in condition for allowance. Should further issues require resolution prior to allowance, the Examiner is requested to telephone applicant's undersigned attorney at the number below.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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